DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-022032
Date Inspected: 17-Mar-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1500
Location: Job Site

CWI Name: See below

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 4W-pp25-W4-1,2,3,4 and the following observations were made:

4W-pp25-W4-1,2,3,4
The QA Inspector was informed by the Smith Emery Quality Control (QC) Inspector identified as Leonard Cross the above identified weld joints were acceptable and ready for QA verification. The QA Inspector performed random visual testing of the completed weld joints and noted they appeared to be in general compliance with the contract requirements. The QA Inspector proceeded to performed random ultrasonic testing (UT) of approximately 10% of the total weld length. The QA Inspector noted no rejectable indications were located at the time of the testing. See TL-6027 for 3.17.11.

Tower temporary welding
South tower leg to shear plate identified as B1E complete joint penetration electro slag weld joint. The QA Inspector randomly observed the ABF Welding Superintendent Dan Ieraci and the ABF welder Kenneth Chapel installing and tack welding the weld joint restraint plates or strong backs to the weld joint identified above. The QA Inspector noted the temporary attachment was identified as a P4 type strong back. The QA Inspector noted the ends of the plate have a single bevel to be welded utilizing a partial joint penetration groove weld at both ends of the attachment form the 2G welding position. The QA Inspector noted for clarification, one end of the plate gets welded to the B1E shear plate and the other end of the plate is welded to the outer skin of the south tower shaft. The QA Inspector noted no weld other than shielded metal arc welding (SMAW) tack welding was performed on

this date. The QA Inspector observed Mr. Ieraci preheat the isolated area adjacent to the electro slag vertical weld joint to 225ºF utilizing a rose bud torch. After the minimum required preheat was achieved, Mr. Ieraci would hold the plate in place while the ABF welder Kenneth Chapel performed SMAW tack weld on the edge of the P4 type strong back and not in the PJP groove to be welded at a later time. The QA Inspector noted the ABF welder was utilizing 1/8" E7018 low hydrogen electrodes with 130 Amps. It was noted the minimum required preheat and SMAW parameters did appear to be in general compliance with the contract requirements. The QA Inspector noted the SE QC Inspector Patrick Swain was on sit to monitor the in process tack welding and fit up. The QA Inspector noted the same process was repeated twice for the above identified weld joint and again for the weld joint identified as shear plate B2E to the south tower shaft outer skin plate. The QA Inspector noted no welding other than tack welding was performed on this date. (Observed the pictures below for clarification) The QA Inspector noted when the flux cored arc welding is performed to attach the restraint plates the welding does appear it will be performed in the heat affected zone (HAZ) of the CJP vertical electro slag weld joint.

Burn thru locations
The Lead QA Inspector and the QC Inspector Jesse Cayabyab previously on 1.11.11 performed a joint inspection of the burn thru locations identified below (reference 6031 for 1.11.11 for additional information) . The QA Inspector noted the QC Inspector performed grinding with a burr bit grinder to remove the dross or burn thru under the “A” deck it plate. The results from the inspection are as follows:

1E/2E-A, 2E/3E-A, 5E/6E-A appear to be in compliance and no additional repairs are required.

6E/7E-A Y=600mm and Y=780mm grinding has been performed against the edge of the steel backing, where it appears a fillet weld was once welded to repair the burn thru. The weld has been removed.

6E/7E-A1 Y=2000mm-3020mm some grinding has been previously performed, but after a review of the area it has been determined additional grinding will need to be performed prior to METS accepting the repairs. (*note the chart has been signed off on the top deck for that particular weld segment indicating the NDT verification has been completed by QA. METS QA has indicated in a separate box next to the NDT dates and initials "pending repair of burn thru".)

7E/8E-A5 -It did not appear that any visible burn thru would require any additional grinding

7W/8W-A2 It did not appear that any visible burn thru would require any additional grinding, note there is no access to get close to the steel backing in weld segment A2.

WELDING INSPECTION REPORT

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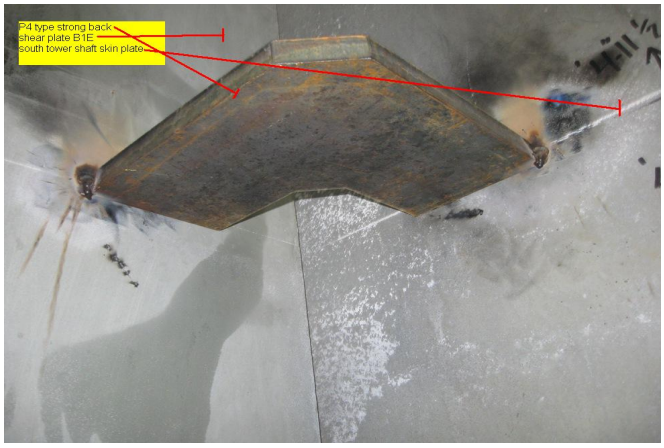

Summary of Conversations:

Mr. Ieraci informed the QA Inspector that five strong backs per weld joint will be installed at all 21 vertical weld joint. Mr. Ieraci informed the QA Inspector the plates are installed 18” from the top of the weld joints and 18” from the bottom of the weld joint and difference between the to attachments is split for the remaining three attachments. Mr. Ieraci elaborated by informing the QA inspector, what ABF has determined thru mock ups is the distortion appears to start 18” from the top and 18” from the bottom thus why they string backs are installed as noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer